

WHAT TO DO IF YOU THINK
YOU HAVE LYME DISEASE

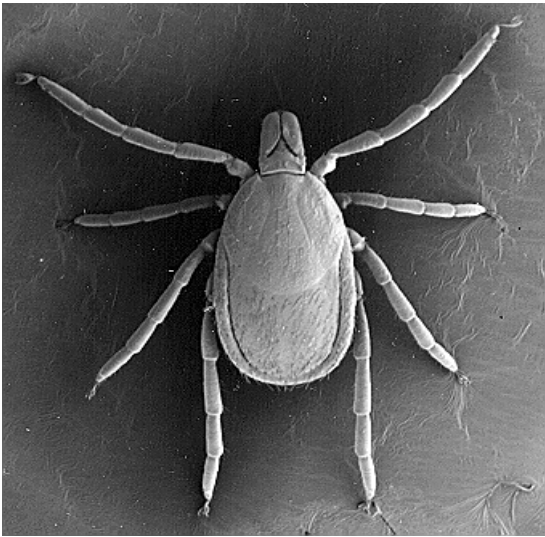
Early recognition of Lyme disease is important. If you find a tick attached to your skin, or were in an area where ticks are known to occur, and develop any of the symptoms listed in this pamphlet, consult your physician. This information will help your physician make a diagnosis. Treatment with antibiotics during the early stage can cure the infection and prevent complications associated with late Lyme disease. Antibiotic treatment of late stage Lyme disease is usually, but not always, successful.

Additional information on Lyme disease can be obtained from your local health agency named in the box below, or by contacting:

California Department of Health Services
Vector-Borne Disease Section
601 North 7th Street, MS 486
P. O. Box 942732
Sacramento, CA 94234-7320
(916) 324-3738
Web address: www.dhs.ca.gov/dcdc
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Local Agency

Facts about
LYME DISEASE
in California



Western Black-Legged Tick

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GRAY DAVIS
Governor

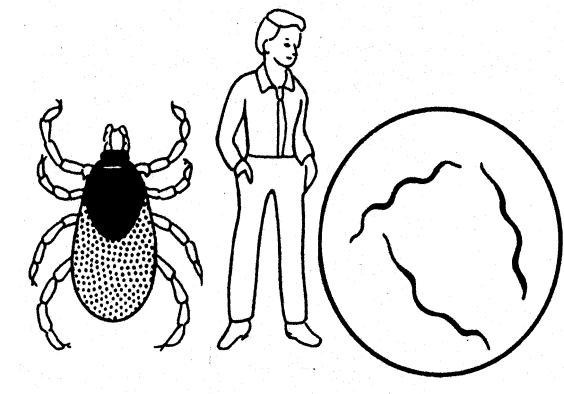
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Director
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LYME DISEASE

Lyme disease is an infectious disease transmitted by the bite of a tick. It is caused by a spirochete (a spiral-shaped bacterium) that can cause mild flu-like illness or, if untreated, can lead to severe chronic health problems. The natural history of this disease is not completely understood and the illness it produces takes many forms. Because of varied symptoms, diagnosis can occasionally be difficult.

Lyme disease was first identified in the United States in 1975 in Connecticut and was first diagnosed in California in 1978. Lyme disease is now recognized as an important tick-borne disease throughout the northeastern U. S. from Massachusetts to Delaware; in the midwest in Minnesota and Wisconsin; and in some western states, including parts of California. Lyme disease is also recognized in many European countries.



Western Black-legged Tick
Ixodes pacificus
(x10)

Lyme disease spirochetes
Borrelia burgdorferi
(x 2000)

The purpose of this pamphlet is to provide information on the symptoms of Lyme disease, its occurrence in California, and measures you can take to protect yourself.

SYMPTOMS

Early Lyme Disease

The early stage of Lyme disease is characterized by one or more of the following symptoms and signs:

- * a characteristic skin rash, called erythema migrans
 - * fatigue
 - * chills and fever
 - * headache
 - * muscle and joint pain
 - * facial nerve palsy
 - *certain heart irregularities

Erythema migrans (EM) is a red, blotchy, expanding rash that may grow to over 5-inches in diameter and often clears centrally, producing a ring-like appearance. EM usually occurs 3 to 30 days after the bite of an infected tick in 90% or more of patients. One or more EM lesions may occur, not necessarily at the tick bite site. EM may precede, accompany, or follow flu-like symptoms. Without treatment, these symptoms may persist, change, disappear and reappear intermittently for several weeks.

Late Lyme Disease

Some symptoms and signs of untreated Lyme disease may not appear until weeks, months, or years after a tick bite:

- * Arthritis is most likely to appear as brief bouts of pain and swelling, usually in one or more large joints, especially the knees.
- * Nervous system abnormalities can include numbness, tingling, or pain in arms and legs, or difficulties in memory and ability to concentrate.

In some persons the rash never forms; in some, the first and only sign of Lyme disease is arthritis, and in others, nervous system problems are the only evidence of Lyme disease.

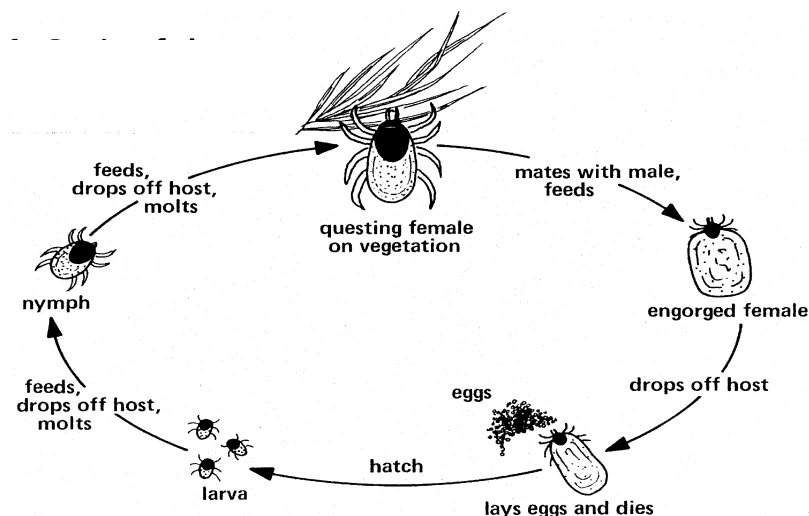
THE VECTOR OF LYME DISEASE IN CALIFORNIA

The western black-legged tick (*Ixodes pacificus*) is the only tick of the 48 species occurring in California that is known to transmit Lyme disease. The spirochete causing Lyme disease was first isolated from this tick in 1984.

The tick has three active life stages. Immature stages (larvae and nymphs) feed on small rodents, rabbits, lizards, birds, and occasionally large mammals. Adults feed on large mammals, principally deer. All stages feed by embedding their mouthparts into the skin of a host and taking a blood meal.

A cycle involving woodrats and a tick which does not feed on humans maintains the agent of Lyme disease in nature. Larval and nymphal ticks acquire spirochetes from the blood of infected mammals as they feed; the infected nymphs and adults may then transmit the spirochetes to other mammals (including humans). At least 48 hours of attachment is necessary for transmission of the Lyme disease spirochete to occur. On average, less than 2% of adult ticks in California are infected with the Lyme disease spirochete.

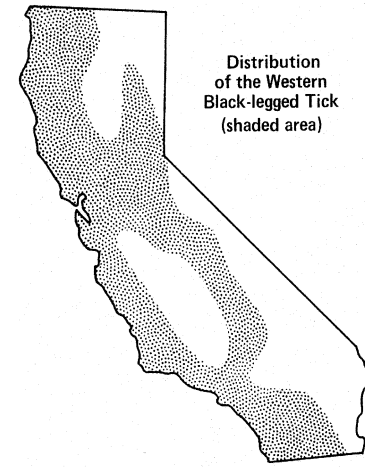
Life Cycle of the Western Black-legged Tick



Adult ticks are most commonly found from October through June (winter/spring), during the period of the year when humidity is usually high. The adult female is red-brown with black legs, about 1/8-inch long; males are smaller and entirely brownish-black. Both are teardrop shaped. The western black-legged tick has been identified in 56 of the 58 California counties, but it is most common in the humid coastal areas and on the western slope of the Sierra Nevada range.

This tick can be found on wild grasses and low vegetation in both urban and rural settings. Ticks do not fly, jump, or drop from trees. Rather, they climb to the tips of vegetation, typically along animal trails or paths, and wait for a host to brush against them.

Nymphal ticks are very small, less than 1/16-inch long, and people may not notice that they've been bitten by one. Nymphs are active primarily March through August (spring/summer) and are found mainly in shaded leaf litter. Bites from nymphs may be responsible for the majority of Lyme disease cases in the U.S., but cases have been reported throughout the year.



TICK AVOIDANCE

Personal

- * Avoid areas where ticks are known to occur.
- * Tuck pants into boots or socks, and shirt into pants.
- * Wear light-colored pants and long-sleeved shirts so ticks can be seen more easily.
- * Apply insect repellent to pants, socks, and shoes. Use a repellent registered for use against ticks.
- * Avoid trail margins, brush, and grassy areas when in tick country.
- * When in tick areas, check yourself and your children daily for ticks.
- * A Lyme disease vaccine may benefit some people at high risk. Discuss with your doctor whether the vaccine is right for you.

Environmental

- * Mow grass along trails, buildings, and camping areas.
- * Remove brush along trails or other areas of high human activity.
- * Area application of insecticides is *not* effective for tick control.

REMOVAL OF ATTACHED TICKS

Prompt removal of ticks may prevent disease transmission.

1. If possible, have someone else remove the tick from you.
2. Use tweezers or forceps rather than your fingers.
3. If you must touch the tick, use a tissue to protect your hand.

If ticks are crushed or squeezed while attached, exposure to body fluids may lead to transmission of Lyme or other disease agents.

4. Grasp the tick's mouthparts as close to the skin as possible.
5. Gently pull the tick straight out, steadily and firmly. *Do not* twist or jerk the tick.

Tick mouthparts have harpoon-like barbs; they do not screw into the skin.

6. Dispose of tick in alcohol or by flushing it down the toilet.
7. Wash hands and bite site with soap and water. Apply antiseptic to bite site.
8. Use the same procedures and precautions when removing ticks from pets.
9. If you develop any of the symptoms described above in the following weeks, consult with your doctor.